Separately 252 shallow well wind pumps have been installed at different locations for drinking water/micro-irrigation purposes by BREDA, with financial assistance from DNES.

(c) Does not arise.

(d) BREDA has been requested to speed up the resource assessment. Based on this assessment, decisions for wind power generation will be taken. DNES has requested Bihar Government to instruct BREDA to speed up wind assessment studies.

Wind pump demonstration programme will be continued in the State during the Eighth Plan by BREDA, with assistance from DNES.

Increase in Generation of Wind and Solar Energy

1775. SHRI MENTAY PADMANA BHAM : Will the Minister of POWER AND NON-CONVENTIONAL ENERGY SOURCES be pleased to state:

(a) whether Government are aware of the studies made in generation of wind and solar energy abroad;

(b) if so, what steps are being taken to increase energy generation from wind and solar sources in our country; and

(c) whether there is any proposal to set up pilot schemes of wind and energy generation in Andhra Pradesh ?

THE MINISTER OF STATE OF THE ', MINISTRY OF POWER AND NON-' CONVENTIONAL ENERGY SOURCES (SHRI KALP NATH RAI): (a) Yes, Sir.

(b) For generation of energy from Wind and Solar energy sources in the country. Government has takeh up a comprehensive programme covering research, development, demonstration and dissemination of various types of systems and devices based on these energy resources. Various types of financial ineentives, such as, subsidy, soft term loans and fiscal incentives in the form of depreciation allowance and relief in sales-tax, excise duty and custom duty are provided to the users and manufacturers in different States and Union Territories of the country for harnessing and use of renewable energy systems and devices. Publicity and Awareness campaign are also being undertaken through All India Radio and Doordarshan network in addition to publicity efforts being made on decentralised basis various State Governments and Implementing Agencies.

(c) Solar thermal, Solar photovoltaic and Wind energy systems and devices for various applications continue to be installed under the on-going demonstration and dissemination programmes of the Deptt, of Non-Conventional Energy Sources. A 550 KW Wind Farm Project has been established at Thirumala. The capacity of this project is being increased by 500 KW. Another Wind Farm project of 2 MW has recently been taken up at Ramagiri in Ananthapur District. In addition, a proposal for setting up of 2 MW Wind Farm project at Kakul-konda has been received from the State Government/Implementing Agency.

Failures in the Northern Regional Electricity Grid

1776. SHRI CHIMANBHAI MEHTA :
SHRI SOM PAL:
SHRI SARADA MOHANTY :

Will the Minister of POWER AND NON-CONVENTIONAL ENERGY SOURCES be pleased to state:

(a) what is the number of failures in the Northern Regional Electricity Grid that took place durng the previous and the current year, respectively;

(b) what are the factors responsible for these disruptions;

(c) whether any attempts have been made to evaluate the direct and indirect losses caused by these disruptions;

(d) whether Government have tried to fix some responsibility for such mishaps;

(e) if not, the reasons therefor; and

(f) what measures are being taken to avoid such recurrences in future ?

THE MINISTER OF STATE OF THE MINISTRY OF POWER AND NON-CONVENTIONAL ENERGY SOURCES (SHRI KALP NATH RAI): (a) During the year 1990-91 and 1991-92, three failures in each year resulting in disruption of power supply in large areas of the grid have occurred in the Northern Region.

(b) The main factors responsible for these grid failures have been as under :

1. Faults causing short circuits in the transmission system.
2. Failure of equipments like capaci-tive voltage transformers, circuit breakers, snapping of Conductors, etc.
3. Failure of protection system.
4. Low voltage caused by heavy reactive power demand by agricultural pumping loads.

(c) The loss of energy generation due to these grid failure during the year 1990-91 and 1991-92 has been estimated to be 53.4 and 80.1 MU respectively. An estimate on indirect losses is not available.

(d) and (e) The analysis of the grid disturbances done by Northern Regional Electricity Board has, *inter-alia,* indicated that none of the failures have occurred due to lapse of any individual.

(f) Various technical measures aimed at avoiding failures of equipments and localising the faults in the event of a disturbance are being taken. These cover review and modification of protection schemes, intensified maintenance of transmisson lines and equipments, installation of equipments to avoid voltage collapse and augmentation of modern load dispatch and communication facilities.

Award of Contract for Gandhar Power .. Project

1777. SHRI RAMDAS AGARWAL: Will the Minister of POWER AND NON-CONVENTIONAL ENERGY SOURCES be pleased to state:

(a) whether it is a fact that Government was under immense pressure from the Japanese Government to expedite its decision on the award of the contract for the Gandhar gas based power project of N.T.P.C;

(b) whether it is also a fact that the third tranche of loan for the project in 1992 from the Overseas Economic Cooperation Fund is likely to be delayed ;

(c) whether N.T.P.C's. technical terms have overcome the initial teething problems as regards the performance of turbine to be imported from Swiss and performance of machines with foreign company's assistance; and

(d) if so, what is the present stage of progress in this regard *1*

THE MINISTER OF STATE OF THE MINISTRY OF POWER AND NON-CONVENTIONAL ENERGY SOURCES (SHRI KALP NATH RAI): (a) No, Sir. The decision to award the contract was not a Government decision.

(b) No, Sir.

(c) NTPC's technical team was deputed to Netherlands to seek first hand information from the utility on the teething problems faced in the gas turbines and the solution effected by the manufacturer to 'overcome these problems. The team was satisfied with the effectiveness of the corrective measures taken by the manufacturer to overcome the teething problems in gas turbines and of the satisfactory performance of the machines thereafter. The gas turbines are to be imported from West Germany and not from Switzerland.

(d) The contract for the main plant equipments has been awarded on 26-3-1992. Preliminary work is in progress at site.

Wind Energy Programme in Madhya Pradesh

1778. SHRI AJIT P. K. JOGI:
KUMARI ALIA:

Will the Minister of POWER AND NON-CONVENTIONAL ENERGY SOURCES be pleased to state :

(a) what are the schemes under, the wind energy programme for Madhya Pradesh; and